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CLAIMS

1. A telomerase peptide for use in a method of treatment or prophylaxis of cancer, characterised in that the telomerase peptide is capable of generating a T cell response directed against telomerase, and comprises a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

2. A nucleic acid for use in a method of treatment or prophylaxis of cancer, the nucleic acid being capable of encoding a telomerase peptide capable of generating a T cell response directed against telomerase, the peptide having a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

3. A telomerase peptide according to Claim 1 or a nucleic acid according to Claim 2 for a use as specified therein, in which the treatment or prophylaxis comprises administering to a mammal suffering or likely to suffer from cancer a therapeutically or prophylactically effective amount of the telomerase peptide so that a T cell response directed against the telomerase is induced in the mammal.

4. A telomerase peptide as claimed in Claims 1 or 3 or a nucleic acid as claimed in Claims 2 or 3 for a use as specified therein, in which the T cell response induced is a cytotoxic T cell response.

5. A pharmaceutical composition comprising at least one telomerase peptide as claimed in any of Claims 1, 3 or 4, or at least one nucleic acid as claimed in Claim 2, together with a pharmaceutically acceptable carrier or diluent.

6. A method for the preparation of a pharmaceutical composition as claimed in Claim 5, in which the method comprises mixing at least one telomerase peptide as claimed in any of Claims 1, 3 and 4, or at least one nucleic acid as claimed in Claim 2, with a pharmaceutically acceptable carrier or diluent.

7. A pharmaceutical composition comprising a combination of at least one telomerase peptide as claimed in any of Claims 1, 3 or 4 and at least one peptide capable of inducing a T cell response directed against an oncogene or mutant tumour suppressor protein or peptide, together with a pharmaceutically acceptable carrier or diluent.

8. A method for the preparation of a pharmaceutical composition as claimed in Claim 7, in which the method comprises mixing at least one telomerase peptide as claimed in any of Claims 1, 3 and 4, with at least one peptide capable of inducing a T cell response directed against an oncogene or mutant tumour suppressor protein or peptide, and a pharmaceutically acceptable carrier or diluent.

9. A pharmaceutical composition as claimed in Claim 7 or a method of making a pharmaceutical composition as claimed in Claim 8, in which the oncogene protein or peptide is a mutant p21-ras protein or peptide, or in which the tumour suppressor protein or peptide is a retinoblastoma or p53 protein or peptide.

10. A telomerase peptide as claimed in any of Claims 1, 3 and 4, a nucleic acid as claimed in Claim 2, or a pharmaceutical composition as claimed in Claims 5, 7 or 9, in which the cancer is selected from breast cancer, prostate cancer, pancreatic cancer, colorectal cancer, lung cancer, malignant melanoma, leukaemias, lymphomas, ovarian cancer, cervical cancer and biliary tract carcinomas.

11. A method of generating T lymphocytes capable of recognising and destroying tumour cells in a mammal, in which the method comprises taking a sample of T lymphocytes from a mammal and culturing the T lymphocyte sample in the presence of a telomerase peptide in an amount sufficient to generate telomerase specific T lymphocytes, in which the telomerase peptide comprises a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

12. A telomerase specific T lymphocyte generated by a method according to Claim 11.

13. A pharmaceutical composition comprising a telomerase specific T lymphocyte according to Claim 12, together with a pharmaceutically acceptable carrier.

14. The use of a telomerase peptide for the manufacture of a medicament for the treatment or prophylaxis of cancer, in which the telomerase peptide is capable of generating a T cell response directed against telomerase, the peptide comprising a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

15. A telomerase peptide for use in a method of treatment or prophylaxis of cancer substantially as hereinbefore described with reference to and as shown in the drawings.

16. The use of a telomerase peptide, or a nucleic acid capable of encoding a telomerase peptide, for the preparation of a medicament for the treatment or prophylaxis of cancer, substantially as hereinbefore described with reference to and as shown in the drawings.

17. A nucleic acid capable of encoding a telomerase peptide for use in a method of treatment or prophylaxis of cancer substantially as hereinbefore described with reference to and as shown in the drawings.

18. A pharmaceutical composition or a method of preparation of such a pharmaceutical composition comprising at least one telomerase peptide substantially as hereinbefore described with reference to and as shown in the drawings.

19. A method of generating telomerase T lymphocytes substantially as hereinbefore described.

20. A method of treatment or prophylaxis of cancer, the method comprising administering a therapeutically or prophylactically effective amount of telomerase peptide to a mammal suffering or likely to suffer from cancer, in which the telomerase peptide is capable of generating a T cell response directed against telomerase, and comprises a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

21. A method of treatment or prophylaxis of cancer, the method comprising administering a therapeutically or prophylactically effective amount of a nucleic acid to a mammal suffering or likely to suffer from cancer, in which the nucleic acid is capable of encoding a telomerase peptide capable of generating a T cell response directed against telomerase, the peptide having a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

22. A method of treatment or prophylaxis of cancer, the method comprising administering a therapeutically or prophylactically effective amount of a telomerase peptide and a peptide capable of inducing a T cell response against an oncogene or mutant tumour suppressor protein or peptide to a mammal suffering or likely to suffer from cancer, in which the telomerase peptide is capable of generating a T cell response directed against telomerase, and comprises a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10).

23. A method of treatment or prophylaxis of cancer, the method comprising:

(a) taking a sample of T lymphocytes from a mammal;

(b) culturing the T lymphocyte sample in the presence of a telomerase peptide in an amount sufficient to generate telomerase specific T lymphocytes capable of recognising and destroying cancer cells in a mammal, the telomerase peptide comprising a sequence EARPALLTSRLRFIPK (SEQ ID NO: 2), DGLRPIVNMDYVVGAR (SEQ ID NO: 3), GVPEYGCVVNLRKTVVNF (SEQ ID NO: 4), ILAKFLHWL (SEQ ID NO: 9) or ELLRSFFYV (SEQ ID NO: 10); and

(c) administering a therapeutically or prophylactically effective amount of the cultured T lymphocytes to a mammal suffering or likely to suffer from cancer.

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